

Claims

1. Fitting for lift-slide doors or windows with at least one running shoe (9) located on a bearing element (7) that can be moved for raising and lowering the door or window sash (2) in a longitudinal running shoe axis relative to the bearing element (7) and with a coupling element (17), which connects the at least one running shoe (9) for this movement with a drive element, for example a push rod (6), provided on one vertical section of the sash frame (2.1), **characterized in that** the coupling element (17) is a rigid, rod-like and/or push/pull type coupling element (17), which can be slided in the bearing element (7) and is connected at one first end with the drive element (6) and at the other end via a jointed connection with the running shoe (9).
2. Fitting as claimed in claim 1, characterized in that the casing (8) of the running shoe (9) is made of one piece, for example of metal, preferably of die-cast zinc.
3. Fitting for lift-slide doors or windows with at least one forend rail (118) and one push rod (6, 120) that can be moved axially on the forend rail, characterized in that the forend rail (4, 118) is flat or strip-shaped.
4. Fitting as claimed in claim 3, characterized by at least one running shoe (9) located on a bearing element (7) so that it can be moved on a longitudinal running shoe axis relative to the bearing element (7) for raising and lowering the door or window sash (2), and with a coupling element (17), which connects the at least one running shoe (9) for this movement with a drive element located on one vertical section of the sash frame (2.1), for example with a push rod (6), whereby the coupling element (17) is a rigid, rod-like and/or push/pull type coupling element (17), which is guided in the bearing element (7) and is connected at one end with the drive element (6) and at the other end via a jointed connection with the running shoe (9).

5. Fitting as claimed in claim 3, characterized by at least one running shoe (9) located on a bearing element (7) so that it can be moved in a longitudinal running shoe axis relative to the bearing element (7) for raising and lowering the door or window sash (2), and with a coupling element (17), which connects the at least one running shoe (9) for this movement with a drive element located on one vertical section of the sash frame (2.1), for example with a push rod (6), whereby the casing (8) of the running shoe (9) is made of one piece, for example of metal, preferably of die-cast zinc.
6. Fitting as claimed in one of the foregoing claims, characterized in that the coupling element (17) has the form of a partial ring or arc and is located in the bearing element (7) such that the ring axis is in a plane perpendicular to the door sash plane.
7. Fitting as claimed in one of the foregoing claims, characterized in that the coupling element (17) is designed as a rack and pinion on its first end and that this end engages with a toothed or perforated section (6.1) of the drive element (6).
8. Fitting as claimed in one of the foregoing claims, characterized in that the second end of the coupling element (17) is connected via a jointed connection with the running shoe (9) or a casing (8) of the running shoe (9).
9. Fitting as claimed in one of the foregoing claims, characterized in that the coupling element (17) engages with its other end in a coupling opening (22.1) of the running shoe (9) or of the running shoe casing (8).
10. Fitting as claimed in one of the foregoing claims, characterized by an arc-shaped guide (18, 19) in the bearing element (7) for the coupling element (17).

11. Fitting as claimed in one of the foregoing claims, characterized in that the coupling element (17) is manufactured as a preformed part made of metal or plastic.
12. Fitting as claimed in one of the foregoing claims, characterized in that the coupling element (17) has a profile that deviates from the circular form, for example a rectangular or square profile, at least between its two ends.
13. Fitting as claimed in one of the foregoing claims, characterized in that the bearing element (7) is designed as an elbow, i.e. with two legs (7.1, 7.2).
14. Fitting as claimed in claim 13, characterized in that the drive element (6) is guided on one leg and the running shoe (9) runs in bearings on the other end.
15. Fitting as claimed in claim 13 or 14, characterized in that the coupling element (17) is located in the area of the junction of the two legs (7.1, 7.2) in the bearing element (7).
16. Fitting as claimed in one of the foregoing claims, characterized in that the running shoe casing (8) has two walls (10) extending in the longitudinal direction of the running shoe and at a distance from each other, and that at least two rollers (12) can turn on bearings between the two walls (10).
17. Fitting as claimed in one of the foregoing claims, characterized in that the longitudinal walls (10) of the running shoe casing (8) are connected with each other at least on the ends of the running shoe by means of end walls (11).
18. Fitting as claimed in one of the foregoing claims, characterized in that at least one projection (15) forming a guide for the running shoe (9) is located on the bearing element (7).

19. Fitting as claimed in claim 18, characterized in that the at least one projection (15) extends into the running shoe casing (8) and forms lateral guide surfaces for inner surfaces of the running shoe casing (8).
20. Fitting as claimed in claim 18 or 19, characterized in that at least one lifting curve (14) is formed on the projection (8) with which (lifting curve) a guide or slide element (16) of the running shoe (9) works together.
21. Fitting as claimed in claim 20, characterized in that the lifting curve is formed by a recess (14).
22. Fitting as claimed in claim 20 or 21, characterized in that the slide element is a guide bolt (16).
23. Fitting for lift-slide doors or windows with at least one running shoe (9) located on a bearing element (7) so that it can be moved in a longitudinal running shoe axis relative to the bearing element (7) for raising and lowering the door or window sash (2), and with a coupling element (17), which connects the at least one running shoe (9) for this movement with a drive element located on one vertical section of the sash frame (2.1), for example with a push rod, characterized in that the casing (8) of the running shoe (9) is made of one piece with at least one sleeve-like coupling section (26) located on one end of the running shoe, manufactured for example of metal, preferably of die-cast zinc.
24. Fitting as claimed in claim 23, characterized in that the sleeve-like coupling section (26) has a sleeve opening (29) with a profile that is made up of a square profile form and a circular profile form such that it forms four sides with a cylindrical section (30) and four corner areas (31) with connecting right-angled surfaces, respectively, whereby the cylindrical sections (30) are located on a common imaginary cylinder surface around the center axis of the sleeve opening (29) and the radius of the cylindrical sections (30) is somewhat smaller than half

the distance of two diagonally opposed corner areas (31), so that the respective sleeve-like coupling section (26) can be used alternately for a connecting rod (25.1, 25.2) with a circular or square profile.

25. Fitting as claimed in claim 23 or 24, characterized by means (32) for fixing the respective connecting rod (25.1, 25.2) in the sleeve opening (29).
26. Lift-slide door or window with at least one door or window sash (106) located in a door or window frame (102), with a running carriage or running shoes (111) located in a groove (113) on one lower, horizontal sash frame element (107.1, 107a.1) for raising and lowering and for sliding the sash (106), with a gear unit (110) located on one vertical sash frame element (107.2, 107a.2) that is connected with the running shoes (111) by means of a push rod (120) guided via a drive connection on a forend rail (118) for raising and lowering the sash (106), whereby the forend rail (118) is fastened to the push rod (120) in the area of a groove (113) on one sash frame element (107.2, 107a.2), characterized in that the forend rail (118) is designed as a flat or strip-shaped rail.
27. Lift-slide door or window as claimed in claim 26, characterized in that the push rod (120) has a flat or strip-shaped design.
28. Lift-slide door or window as claimed in claim 26 or 27, characterized in that the width of the forend rail is somewhat greater than the width of the push rod (120).
29. Lift-slide door or window as claimed in claim 28, characterized in that the groove (113) for fastening the forend rail (118) is provided with a recess (116) on both sides at its opening or the edge of its opening to form a contact surface (113.3) against which the forend rail (118) bears against edge areas and that the push rod (120) is contained in the groove (113).

30. Lift-slide door or window as claimed in one of the foregoing claims, characterized in that the groove (113) has a width that is the same or approximately the same as the width of the push rod (120).
31. Lift-slide door or window as claimed in one of the foregoing claims, characterized in that at least the groove (113) for containing the running carriage or running shoes (111) and the groove for fastening the forend rail (118) with the push rod (120) are designed identically.
32. Lift-slide door or window as claimed in one of the foregoing claims, characterized in that at least one further sash frame element forming the sash frame (107, 107a), preferably the sash frame element (107.3, 107a.3) forming the top of the sash (106) also has a groove (113) that is designed identically to the groove (113) for containing the running carriage or running shoes (111) and to the groove for fastening the forend rail (118) to the push rod (120).
33. Lift-slide door or window as claimed in claim 32, characterized in that a profile (121) with a guide element (122) is provided for in the groove (113) of the sash frame element (107.3, 107a.3) forming the top of the sash frame (107, 107a).
34. Lift-slide door or window as claimed in one of the foregoing claims, characterized in that the sash frame elements (107.1, 107.2, 107.3, 107.4) forming the sash frame (107) are profiles made of wood.
35. Lift-slide door or window as claimed in one of the foregoing claims, characterized in that the sash frame elements (107a.1, 107a.2, 107a.3, 107a.4) forming the sash frame (107a) are profiles made of plastic.